

Supplementary material

Unemployment and crime in US cities during the coronavirus pandemic

Julia P Schleimer,^{1,2} Veronica A Pear,^{1,2} Christopher D McCort,^{1,2} Aaron B Shev,^{1,2} Alaina De Biasi,^{1,2} Elizabeth Tomsich,^{1,2} Shani Buggs,^{1,2} Hannah S Laqueur,^{1,2} Garen J Wintemute^{1,2}

¹Violence Prevention Research Program, Department of Emergency Medicine, University of California, Davis

²California Firearm Violence Research Center

Supplementary Table 1. Data sources, city open data portals for police-reported crime incidents

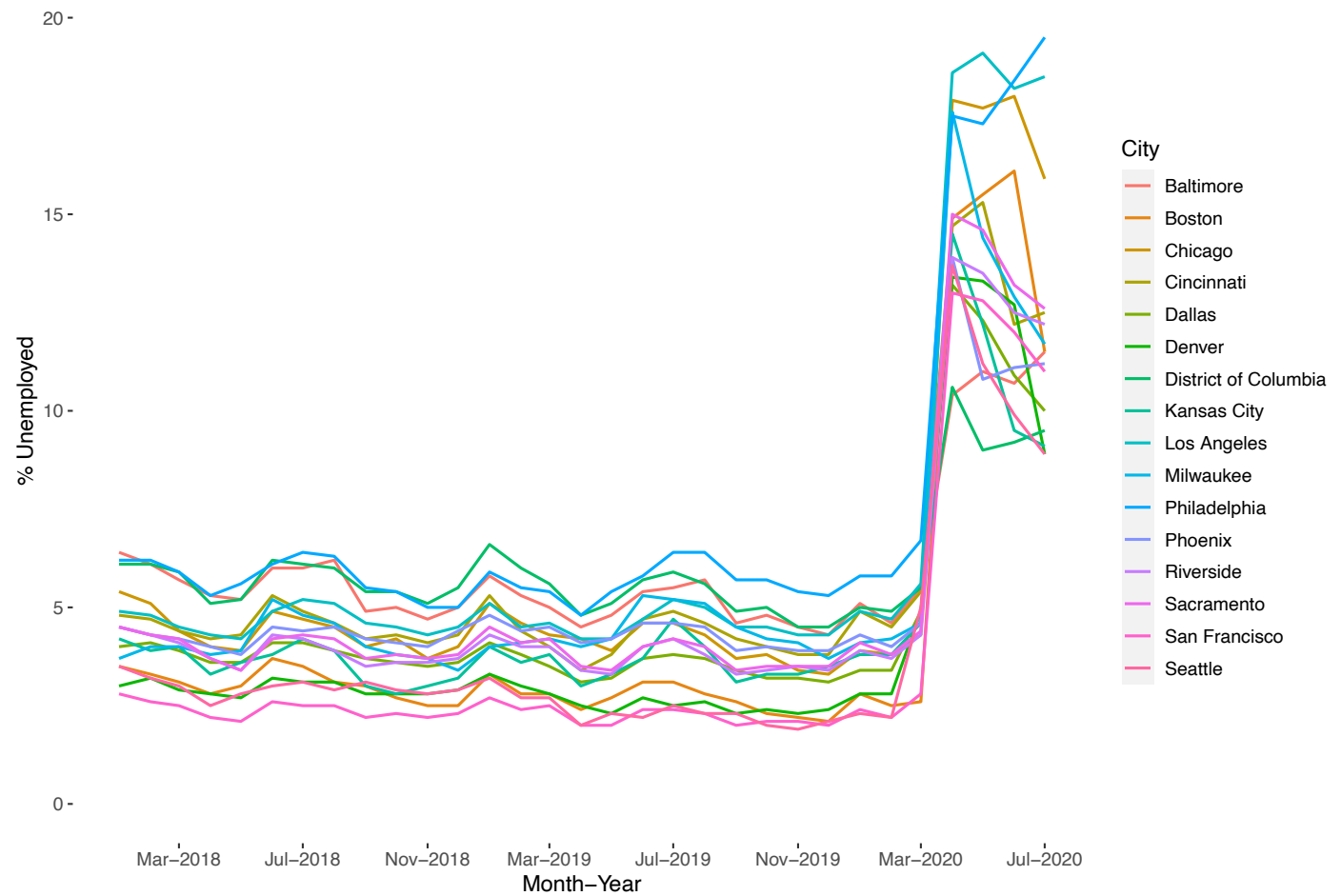
City	Source	Notable exclusions and inclusions
Baltimore, MD	https://data.baltimorecity.gov/datasets/part-1-crime-data-3	Data exclude incidents for which an address could not be geocoded (by Baltimore Police Department)
Boston, MA	https://data.boston.gov/dataset/crime-incident-reports-august-2015-to-date-source-new-system	
Chicago, IL	https://data.cityofchicago.org/Public-Safety/Crimes-2001-to-present-Dashboard/5cd6-ry5g	
Cincinnati, OH	https://data.cincinnati-oh.gov/Safety/PDI-Police-Data-Initiative-Crime-Incidents/k59e-2pvf	
Dallas, TX	https://www.dallasopendata.com/Public-Safety/Police-Incidents/qv6i-rri7	Data exclude: 1) sexually oriented offenses and 2) offenses where juveniles or children (individuals under 17 years of age) are the victim or suspect
Denver, CO	https://www.denvergov.org/opendata/dataset/city-and-county-of-denver-crime	Data exclude child abuse cases, and other crimes which by their nature involve juveniles, or which the reports indicate involve juveniles as victims, suspects, or witnesses
District of Columbia	https://opendata.dc.gov/search?categories=crime%20and%20incidents&q=crime%20incidents	
Kansas City, MO	https://data.kcmo.org/Crime/KCPD-Crime-Data-2020/vsgj-uufz	
Los Angeles, CA	https://data.lacity.org/A-Safe-City/Crime-Data-from-2010-to-2019/63jg-8b9z ; https://data.lacity.org/A-Safe-City/Crime-Data-from-2020-to-Present/2nrs-mtv8	
Milwaukee, WI	https://data.milwaukee.gov/dataset/wibr ; https://data.milwaukee.gov/dataset/wibrarchive	Assault includes simple and homicide includes justifiable (these categories cannot be separated).
Philadelphia, PA	https://www.opendataphilly.org/dataset/crime-incidents	
Phoenix, AZ	https://www.phoenixopendata.com/dataset/crime-data	
Riverside, CA	https://riversideca.gov/transparency/data/dataset/show/27/Crime_Reports	
Sacramento, CA	https://data.cityofsacramento.org/datasets/64279ca193a54189aa9214a29d32520c_0 ; https://data.cityofsacramento.org/search?q=crime%20data&tags=public%20safety	
San Francisco, CA	https://data.sfgov.org/Public-Safety/Police-Department-Incident-Reports-2018-to-Present/wg3w-h783	
Seattle, WA	https://data.seattle.gov/Public-Safety/SPD-Crime-Data-2008-Present/tazs-3rd5	

All data in were accessed in November 2020.

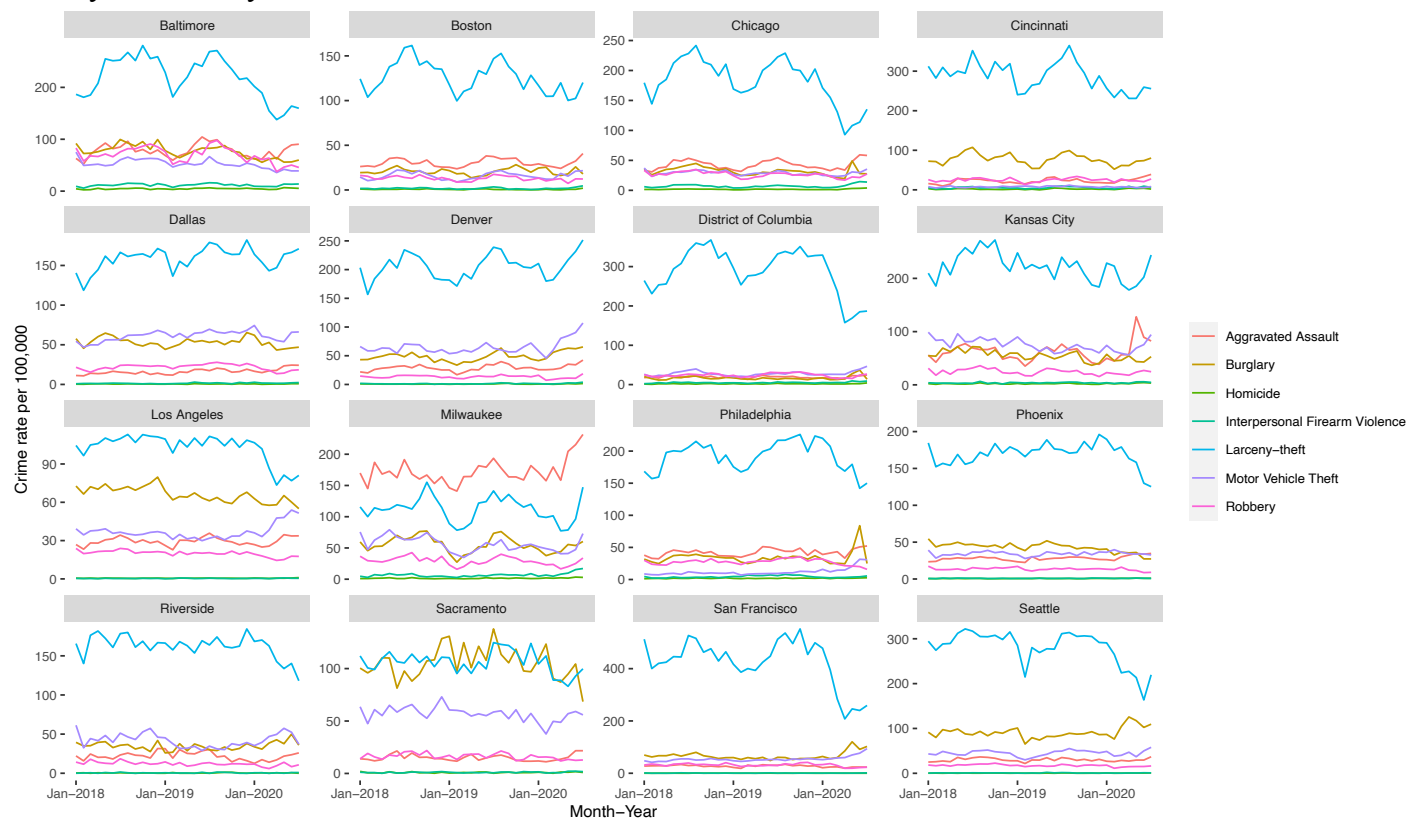
Supplementary Table 2. Data sources for exposure, outcomes, and covariates

Variable	Source & Notes	Date accessed
<i>Exposure</i>		
"Excess" unemployment per city-month from March through July 2020	Bureau of Labor Statistics, Local Area Unemployment Statistics. ¹ Unemployment is defined as the percentage of the civilian, noninstitutionalized labor force ages 16 and older who are unemployed and actively looking for work.	July-2021
<i>Outcomes</i>		
Incidents of intentional, interpersonal firearm violence in which at least one person was injured or killed	Gun Violence Archive, which compiles incidents of firearm violence from approximately 7,500 sources, including the news media, police, and government. ²	Aug-2020
Police-reported crime incidents	See Supplementary Table 1. We included six crime types in the Federal Bureau of Investigation's Uniform Crime Reporting Program, Part I offenses: criminal homicide, robbery, aggravated assault, burglary, larceny-theft, and motor vehicle theft.	Nov-2020
<i>Covariates</i>		
COVID-19 cases and deaths per county population	Johns Hopkins University Center for Systems Science and Engineering time series of cumulative cases and deaths (data are at the county level). ³	Aug-2020
Physical distancing	Anonymized, aggregated smartphone data from Safegraph measuring average change in the percentage of the population staying completely at home (compared to the week ending February 12, 2020). ⁴ A smartphone device was considered completely at home in a given day if it did not leave the location (~153m x ~153m cell) in which it spent the majority of nights in the prior 6-week period. ⁴ We adjusted for sampling bias using the recommended post-stratification weighting approach. ⁵	Sep-2020
Stay-home orders	National league of cities' COVID-19: Local Action Tracker ⁶ and other local news outlets. State orders were used in the absence of city orders.	Aug-2020
Temperature (degrees Fahrenheit) and precipitation (inches)	PRISM Climate Group, Oregon State University. ⁷ Bulk download requires latitude and longitude; we used the latitude and longitude of city capitals.	Aug-2020
City population size	US Census City and Town Population Totals: 2010-2019. ⁸ We extrapolated estimates for 2020 with cubic regression.	May-2020
Incidents of police violence at protests against the murder of George Floyd, per city population	Crowdsourced database of police brutality during the 2020 protests against the murder of George Floyd. ⁹	Aug-2020
Attendees at protests related to racial justice and policing per city population	Count love, which compiles data on protests from local newspaper and television sites. ¹⁰ We included events in support of racial justice and greater police accountability and, separately, events in support of white supremacy, other far-right causes, and the police.	Aug-2020

Supplementary Figure 1. Percentage of the population unemployed by city-month, January 2018 – July 2020



Supplementary Figure 2. Crime rate per 100,000 population by crime type and city-month, January 2018 – July 2020



Supplementary Table 3. Excess unemployment per city, March-July 2020

	Highest value of excess unemployment	Lowest value of excess unemployment	Mean excess unemployment	Standard deviation of excess unemployment
Baltimore	6.9	1.2	5.5	2.4
Boston	13.3	0.2	9.7	5.6
Chicago	14.9	1.0	11.5	5.9
Cincinnati	11.5	1.4	7.9	4.1
Dallas	10.3	1.7	7.0	3.4
Denver	11.1	2.4	8.2	3.8
District of Columbia	6.6	0.8	4.1	2.1
Kansas City	11.4	0.8	6.4	4.0
Los Angeles	14.8	1.0	11.3	5.8
Milwaukee	13.8	0.5	7.9	4.9
Philadelphia	13.2	1.2	10.3	5.1
Phoenix	10.2	0.6	6.4	3.5
Riverside	10.8	0.7	7.9	4.1
Sacramento	11.8	0.6	8.5	4.6
San Francisco	11.3	0.7	8.5	4.4
Seattle	12.2	3.0	7.9	3.4

Supplementary Table 4. Average number of crime incidents per city, March-July 2020

	Aggravated Assault	Interpersonal firearm violence	Homicide	Burglary	Larceny- theft	Motor vehicle theft	Robbery
Baltimore	460.2	67.6	28.6	345.4	883.4	230.8	281.8
Boston	209.8	17.8	5.4	132.2	758.0	122.6	78.0
Chicago	1,268.6	285.4	73.6	779.6	3,117.8	769.8	571.2
Cincinnati	91.4	20.2	9.6	213.2	750.8	21.2	73.8
Dallas	284.8	23.8	8.4	623.8	2,112.0	801.0	218.4
Denver	244.2	17.0	7.6	450.0	1,585.4	619.0	87.6
District of Columbia	142.4	50.8	16.8	149.8	1,324.4	243.2	139.0
Kansas City	412.0	22.6	15.8	239.6	996.8	353.6	113.2
Los Angeles	1,243.4	19.4	25.6	2,345.6	3,165.0	1,895.8	644.4
Milwaukee	1,161.0	64.4	13.8	299.2	588.0	291.8	140.0
Philadelphia	719.4	63.2	36.0	644.6	2,594.2	355.4	324.0
Phoenix	562.0	16.4	16.2	550.8	2,564.4	580.0	194.4
Riverside	68.6	1.6	1.0	137.0	466.4	162.8	32.6
Sacramento	88.2	7.6	5.6	464.2	472.8	281.8	68.6
San Francisco	201.0	7.0	0.8	805.0	2,169.6	629.6	197.0
Seattle	231.6	6.0	4.0	852.8	1,598.0	353.8	114.6

Supplementary Table 5. Adjusted association between excess unemployment and violent and acquisitive crime, 16 US cities March-July 2020

	Average difference in no. incidents (95% CI)	
	High excess vs. observed excess	Low excess vs. observed excess
Violent Crime		
Aggravated Assault	16.5 (-5.5, 41.7)	-34.6 (-81.7, 12.5)
Interpersonal firearm violence	3.3 (-0.2, 6.7)	-8.4 (-16.6, 0.8)
Homicide	2.0 (-0.2, 3.9)	-4.5 (-7.9, 0.7)
Acquisitive Crime		
Burglary	-27.3 (-55.0, 31.9)	78.7 (-58.6, 200.2)
Larceny-theft	-1.2 (-128.4, 50.1)	2.4 (-75.7, 380.7)
Motor Vehicle Theft	5.3 (-32.5, 32.4)	-12.9 (-66.3, 98.6)
Robbery	-3.8 (-18.5, 6.7)	8.9 (-11.4, 57.7)

Supplementary Table 6. Adjusted association between excess unemployment and violent and acquisitive crime by month, 16 US cities March-July 2020

		Average difference in no. incidents (95% CI)	
		High excess vs. observed excess	Low excess vs. observed excess
Violent Crime			
Aggravated Assault			
	March	47.2 (-13.5, 124.7)	0 (-0.6, 0.6)
	April	0.8 (-0.1, 3.6)	-41.6 (-95.0, 16.6)
	May	5.4 (-1.5, 15.7)	-44.0 (-103.8, 16.6)
	June	12.5 (-3.7, 33.4)	-45.6 (-110.5, 15.2)
	July	16.9 (-5.8, 42.3)	-41.9 (-101.9, 15.0)
Interpersonal firearm violence			
	March	8.6 (-0.1, 20.4)	0 (-0.1, 0.1)
	April	0.1 (-0.1, 0.7)	-8.9 (-17.0, 0.8)
	May	0.9 (-0.1, 1.8)	-10.3 (-19.5, 1.1)
	June	2.6 (-0.2, 4.7)	-11.8 (-24.3, 0.9)
	July	4.4 (-0.4, 8.3)	-11.1 (-22.5, 1.0)
Homicide			
	March	5.8 (-0.4, 11.6)	0 (-0.1, 0.1)
	April	0.1 (-0.0, 0.4)	-4.9 (-8.3, 0.7)
	May	0.6 (0.0, 1.2)	-5.5 (-10.0, 0.8)
	June	1.5 (-0.1, 2.9)	-6.2 (-10.6, 1.0)
	July	2.2 (-0.1, 4.7)	-6.2 (-10.7, 1.1)
Acquisitive Crime			
Burglary			
	March	-84.0 (-171.4, 102.7)	0 (-1.0, 1.2)
	April	-2.2 (-7.8, 1.1)	113.1 (-80.2, 283.8)
	May	-7.6 (-18.8, 7.5)	107.6 (-79.8, 276.8)
	June	-18.9 (-40.0, 19.6)	92.3 (-71.4, 231.87)
	July	-24.0 (-48.7, 26.4)	80.6 (-61.7, 209.4)
Larceny-theft			
	March	-3.7 (-412.5, 155.8)	0 (-1.9, 2.1)
	April	-0.1 (-11.6, 1.2)	3.3 (-109.9, 511.7)
	May	-0.3 (-40.9, 13.0)	3.1 (-99.0, 506.3)
	June	-0.7 (-70.7, 31.6)	2.8 (-92.8, 445.1)
	July	-1.0 (-116.3, 43.3)	2.7 (-83.8, 451.3)
Motor Vehicle Theft			
	March	15.5 (-86.9, 105.2)	0 (-0.6, 0.6)

	April	0.3 (-2.9, 1.6)	-16.3 (-83.4, 124.1)
	May	1.4 (-11.4, 7.0)	-16.3 (-83.8, 127.2)
	June	3.8 (-26.7, 19.2)	-16.0 (-84.3, 120.6)
	July	5.7 (-39.6, 30.0)	-15.6 (-81.0, 126.3)
Robbery			
	March	-12.5 (-59.1, 23.4)	0 (-0.4, 0.4)
	April	-0.2 (-1.9, 0.2)	11.5 (-14.7, 72.6)
	May	-0.8 (-5.9, 0.8)	11.3 (-14.4, 73.8)
	June	-2.2 (-11.4, 3.3)	11.1 (-14.4, 69.9)
	July	-3.1 (-17.5, 4.4)	10.8 (-13.3, 72.5)

Supplementary Table 7. Adjusted association between excess unemployment and aggravated assault by city, March-July 2020

	Average difference in no. incidents (95% CI)	
	High excess vs. observed excess	Low excess vs. observed excess
Baltimore	6.9 (-2.3, 17.8)	-20.9 (-45.5, 8.6)
Boston	7.7 (-2.8, 18.4)	-19.1 (-37, 11.5)
Chicago	39.9 (-6.4, 95.5)	-126.4 (-264.6, 28.2)
Cincinnati	3.1 (-1.1, 7.5)	-5.4 (-12.1, 2.4)
Dallas	9.1 (-3.2, 22)	-14.7 (-32.3, 6.1)
Denver	7.0 (-2.8, 17.0)	-14.0 (-30.7, 7.1)
District of Columbia	3.5 (-1.9, 7.1)	-4.3 (-8.3, 2.6)
Kansas City	19.6 (-1.3, 52.5)	-20.7 (-50.1, 2.2)
Los Angeles	39.3 (-4.5, 105.5)	-117.9 (-268.6, 20.0)
Milwaukee	67.7 (-29.5, 143.1)	-79.3 (-152.4, 43.7)
Philadelphia	19.8 (-8.3, 48.1)	-64.7 (-131.5, 38.3)
Phoenix	20.4 (-4.8, 50.1)	-29.8 (-66.4, 9.3)
Riverside	1.8 (-0.5, 4.8)	-4.8 (-11.0, 1.9)
Sacramento	2.6 (-0.7, 6.9)	-6.4 (-14.8, 2.4)
San Francisco	5.8 (-2.1, 14.7)	-14.8 (-32.8, 6.9)
Seattle	10.3 (-3.6, 25.0)	-11.0 (-24.1, 4.9)

Supplementary Table 8. Adjusted association between excess unemployment and interpersonal firearm violence by city, March-July 2020

	Average difference in no. incidents (95% CI)	
	High excess vs. observed excess	Low excess vs. observed excess
Baltimore	2.5 (-0.4, 4.9)	-8.9 (-13.1, 3.8)
Boston	1.3 (-0.3, 2.3)	-4.1 (-5.5, 2.1)
Chicago	18.1 (5.7, 38.1)	-67.8 (-109.1, -21.5)
Cincinnati	1.9 (-0.1, 3.4)	-3.2 (-5.2, 0.5)
Dallas	2.4 (-0.6, 3.9)	-3.8 (-5.5, 1.5)
Denver	1.2 (-0.2, 2.2)	-2.6 (-3.9, 1.0)
District of Columbia	3.1 (-1.3, 4)	-4.1 (-5, 2.3)
Kansas City	3.0 (-0.3, 5.7)	-3.0 (-5.0, 0.5)
Los Angeles	1.4 (0.3, 3.0)	-4.8 (-7.9, -0.8)
Milwaukee	10.5 (0.0, 17.7)	-11.8 (-17.7, 0.9)
Philadelphia	4.2 (-0.2, 8.7)	-14.3 (-21.7, 4)
Phoenix	1.7 (-0.2, 3.1)	-2.5 (-3.8, 0.7)
Riverside	0.1 (0.0, 0.3)	-0.3 (-0.5, 0.1)
Sacramento	0.6 (0.0, 1.1)	-1.4 (-2.3, 0.2)
San Francisco	0.4 (-0.1, 0.8)	-1.3 (-1.9, 0.5)
Seattle	0.8 (-0.1, 1.5)	-0.9 (-1.4, 0.2)

Supplementary Table 9. Adjusted association between excess unemployment and homicide by city, March-July 2020

	Average difference in no. incidents (95% CI)	
	High excess vs. observed excess	Low excess vs. observed excess
Baltimore	1.7 (-0.1, 3.2)	-5.3 (-8.0, 1.4)
Boston	0.7 (-0.1, 1.0)	-1.7 (-2.3, 0.7)
Chicago	7.4 (3.8, 14.1)	-23.8 (-37.0, -12.0)
Cincinnati	1.2 (0.0, 2.2)	-2.0 (-3.1, 0.1)
Dallas	1.2 (-0.2, 1.8)	-1.7 (-2.4, 0.5)
Denver	0.9 (-0.1, 1.6)	-1.7 (-2.6, 0.4)
District of Columbia	1.7 (-0.3, 2.4)	-2.0 (-2.7, 0.4)
Kansas City	3.1 (-0.4, 5.5)	-2.9 (-4.4, 0.7)
Los Angeles	3.4 (0.1, 5.7)	-9.5 (-12.9, 1.0)
Milwaukee	3.3 (0.0, 5.9)	-3.4 (-5.2, 0.4)
Philadelphia	3.9 (-0.6, 6.9)	-13.1 (-17.2, 4.1)
Phoenix	2.4 (-0.3, 3.9)	-3.2 (-4.5, 0.8)
Riverside	0.2 (0.0, 0.3)	-0.3 (-0.5, 0.1)
Sacramento	0.7 (0.0, 1.2)	-1.5 (-2.2, 0.2)
San Francisco	0.1 (0.0, 0.2)	-0.3 (-0.4, 0.1)
Seattle	0.6 (-0.1, 1.1)	-0.6 (-0.9, 0.2)

Supplementary Table 10. Adjusted association between excess unemployment and burglary by city, March-July 2020

	Average difference in no. incidents (95% CI)	
	High excess vs. observed excess	Low excess vs. observed excess
Baltimore	-7.5 (-13.8, 10.0)	28.9 (-25.1, 58.3)
Boston	-6.6 (-11.4, 10.0)	25.8 (-18.7, 57.8)
Chicago	-36.6 (-62.2, 49.9)	144.8 (-128.1, 307.7)
Cincinnati	-10.7 (-18.6, 14.4)	22.7 (-22.7, 43.3)
Dallas	-32.3 (-60.9, 35.7)	61.6 (-52.7, 129.5)
Denver	-17.1 (-30.8, 23.6)	43.3 (-42.7, 89.8)
District of Columbia	-4.7 (-10.3, 0.5)	7.5 (-0.5, 18.3)
Kansas City	-17.4 (-30.9, 21.1)	22.6 (-20.8, 44.5)
Los Angeles	-121.1 (-223.5, 121.2)	454.2 (-307.1, 976.1)
Milwaukee	-24.0 (-42.4, 28.0)	35.3 (-30.9, 70.0)
Philadelphia	-23.1 (-38.5, 36.5)	101.9 (-100.6, 205.5)
Phoenix	-31.0 (-57.3, 41.8)	53.8 (-55.6, 109.9)
Riverside	-5.1 (-9.5, 6.7)	15.9 (-15.5, 33.6)
Sacramento	-23.0 (-41.7, 29.9)	65.6 (-60.3, 135.9)
San Francisco	-28.0 (-50.6, 30)	108.3 (-80.7, 233.4)
Seattle	-49.2 (-93.4, 56.9)	67.8 (-58.5, 147.3)

Supplementary Table 11. Adjusted association between excess unemployment and larceny-theft by city, March-July 2020

	Average difference in no. incidents (95% CI)	
	High excess vs. observed excess	Low excess vs. observed excess
Baltimore	-0.3 (-32.1, 14.0)	0.9 (-31.5, 123.5)
Boston	-0.6 (-58.0, 34.5)	1.4 (-60.5, 210.4)
Chicago	-2.5 (-277.9, 77.9)	6.9 (-166.6, 1091.2)
Cincinnati	-0.6 (-57.6, 24.7)	1.0 (-36.1, 120.1)
Dallas	-1.4 (-156.1, 68.7)	2.3 (-95.1, 290.6)
Denver	-0.9 (-102.8, 46.5)	1.8 (-73.9, 253.4)
District of Columbia	-0.8 (-57.8, 40)	0.9 (-42.3, 82.3)
Kansas City	-1.0 (-115.9, 43.4)	1.1 (-40.5, 157.2)
Los Angeles	-2.3 (-256.2, 88.0)	6.5 (-207.5, 936.5)
Milwaukee	-0.7 (-84.3, 18.0)	0.9 (-18.9, 129.9)
Philadelphia	-1.7 (-183.8, 56.4)	4.9 (-119.2, 762.5)
Phoenix	-2.0 (-195.6, 95.1)	3.0 (-119.4, 361.6)
Riverside	-0.3 (-30.6, 11.8)	0.7 (-23.9, 91.2)
Sacramento	-0.3 (-35.3, 13.9)	0.8 (-27.9, 105.5)
San Francisco	-1.5 (-149.1, 79.3)	3.5 (-148.9, 428.1)
Seattle	-1.5 (-154.2, 68.0)	1.6 (-60.0, 217.4)

Supplementary Table 12. Adjusted association between excess unemployment and motor vehicle theft by city, March-July 2020

	Average difference in no. incidents (95% CI)	
	High excess vs. observed excess	Low excess vs. observed excess
Baltimore	1.3 (-6.5, 8.3)	-4.1 (-18.9, 24.9)
Boston	1.3 (-7.2, 9.7)	-3.9 (-18.1, 29.5)
Chicago	8.1 (-42.6, 54.9)	-26.6 (-135.5, 199.9)
Cincinnati	0.3 (-1.5, 1.7)	-0.5 (-2.5, 3.4)
Dallas	9.4 (-56.0, 52.8)	-15.6 (-71.0, 108.8)
Denver	5.7 (-33.1, 37.3)	-12.2 (-63.6, 84.3)
District of Columbia	2.0 (-12.9, 8.5)	-2.8 (-10.3, 20.5)
Kansas City	6.0 (-38.1, 33.1)	-6.7 (-32.0, 51.3)
Los Angeles	19.4 (-107.5, 117.5)	-67.4 (-323.5, 498.2)
Milwaukee	6.1 (-38, 19.3)	-7.6 (-21.0, 60.4)
Philadelphia	2.7 (-13.7, 18.9)	-11.9 (-61.4, 85.7)
Phoenix	7.7 (-45.9, 45.9)	-11.9 (-59.9, 87.3)
Riverside	1.5 (-8.4, 9.9)	-3.9 (-21.2, 29.0)
Sacramento	3.1 (-15.4, 19.2)	-7.6 (-39.9, 47.4)
San Francisco	5.5 (-32.7, 31.7)	-16.8 (-73.9, 131.7)
Seattle	5.4 (-29.4, 35.0)	-6.1 (-32.2, 40.6)

Supplementary Table 13. Adjusted association between excess unemployment and robbery by city, March-July 2020

	Average difference in no. incidents (95% CI)	
	High excess vs. observed excess	Low excess vs. observed excess
Baltimore	-2.6 (-11.7, 5.2)	7.8 (-12.0, 39.1)
Boston	-1.5 (-6.8, 3.1)	3.8 (-5.2, 23.7)
Chicago	-10.7 (-47.6, 20.1)	33.7 (-46.3, 195.2)
Cincinnati	-1.4 (-6.4, 2.3)	2.6 (-3.5, 13.4)
Dallas	-4.2 (-20.5, 5.4)	6.7 (-7.1, 38.4)
Denver	-1.4 (-7.1, 2.1)	2.7 (-3.4, 16.7)
District of Columbia	-2.0 (-9.7, 2.3)	2.6 (-2.4, 14.6)
Kansas City	-3.0 (-14.4, 5.2)	3.3 (-4.9, 18.9)
Los Angeles	-11.8 (-53.1, 20.5)	35.0 (-46.3, 215.9)
Milwaukee	-4.6 (-22.2, 4.7)	5.7 (-4.7, 34.8)
Philadelphia	-5.7 (-27, 7.0)	16.6 (-12.4, 105.5)
Phoenix	-3.9 (-17.9, 6.9)	6.1 (-8.5, 32.0)
Riverside	-0.5 (-2.3, 1.0)	1.2 (-1.9, 6.9)
Sacramento	-1.3 (-5.8, 1.9)	3.1 (-3.5, 16.2)
San Francisco	-3.4 (-15.8, 6.1)	9.1 (-11.8, 49.8)
Seattle	-2.5 (-12.5, 3.3)	2.8 (-3.1, 17.2)

Supplementary Table 14. Adjusted association between excess unemployment and violent and acquisitive crime, additionally controlling for incidents of police violence at protests against police brutality during the summer of 2020 and attendees at protests related to racial justice and policing, 16 US cities March-July 2020

	Average difference in no. incidents (95% CI)	
	High excess vs. observed excess	Low excess vs. observed excess
Violent crime		
Aggravated Assault	9.2 (-9.5, 28.3)	-20.0 (-56.4, 21.7)
Interpersonal firearm violence	2.4 (-0.6, 5.9)	-6.5 (-15.8, 1.5)
Homicide	1.5 (-0.3, 3.2)	-3.7 (-6.9, 1.3)
Acquisitive crime		
Burglary	-39.4 (-61.9, 19.1)	121.7 (-29.2, 232.2)
Larceny-theft	-3.2 (-123.8, 50.6)	6.7 (-77.1, 367.5)
Motor Vehicle Theft	5.1 (-28.0, 32.1)	-12.3 (-67.9, 84.2)
Robbery	-5.6 (-18.1, 5.8)	13.6 (-8.9, 57.6)

Supplementary Table 15. Adjusted association between excess unemployment and violent and acquisitive crime, excluding Kansas City, MO, 15 US cities March-July 2020

	Average difference in no. incidents (95% CI)	
	High excess vs. observed excess	Low excess vs. observed excess
Violent crime		
Aggravated Assault	8.8 (-10.5, 25.3)	-19.9 (-58.8, 23.0)
Interpersonal firearm violence	3.3 (-0.4, 7.1)	-8.7 (-18.1, 1.3)
Homicide	1.9 (-0.2, 3.7)	-4.6 (-8, 1.0)
Acquisitive crime		
Burglary	-27.7 (-57.6, 41.1)	81.5 (-74.1, 217.9)
Larceny-theft	-2.8 (-122.6, 61.8)	6.0 (-96.8, 376.4)
Motor Vehicle Theft	3.1 (-30.9, 34.4)	-8.0 (-75.5, 100.9)
Robbery	-4.8 (-19.7, 5.8)	11.8 (-9.9, 63.2)

Supplementary Table 16. E-values for adjusted association between excess unemployment and violent crime, 16 US cities March-July 2020

	Interpersonal firearm violence	Homicide
High excess vs. observed excess		
RR (95% CI)	1.1 (1.0, 1.2)	1.1 (1.0, 1.2)
E-value RR	1.4	1.5
Low excess vs. observed excess		
RR (95% CI)	0.8 (0.7, 1.0)	0.8 (0.7, 1.0)
E-value RR	1.7	1.9

RR = rate ratio

REFERENCES

1. U.S. Bureau of Labor Statistics. Local Area Unemployment Statistics: Frequently Asked Questions. Accessed May 12, 2021. <https://www.bls.gov/lau/laufaq.htm#Q01>
2. Gun Violence Archive. Accessed September 25, 2020. <https://www.gunviolencearchive.org/>
3. CSSE at Johns Hopkins University. *COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University.*; 2020. Accessed October 1, 2020. <https://github.com/CSSEGISandData/COVID-19>
4. Social Distancing Metrics. SafeGraph. Accessed October 1, 2020. <https://docs.safegraph.com/docs/social-distancing-metrics>
5. Measuring and Correcting Sampling Bias in Safegraph Patterns for More Accurate Demographic Analysis. Accessed September 30, 2020. <https://www.safegraph.com/blog/measuring-and-correcting-sampling-bias-for-accurate-demographic-analysis>
6. National League of Cities. Local Action Tracker, COVID-19 Pandemic Response. COVID-19 Pandemic Response. Accessed October 7, 2020. <https://covid19.nlc.org/resources/covid-19-local-action-tracker/>
7. PRISM Climate Group, Oregon State U. Accessed October 1, 2020. <https://prism.oregonstate.edu/explorer/>
8. US Census Bureau. City and Town Population Totals: 2010-2019. The United States Census Bureau. Accessed February 11, 2021. <https://www.census.gov/data/tables/time-series/demo/popest/2010s-total-cities-and-towns.html>
9. *Police Brutality During the 2020 George Floyd Protests*. 2020PB; 2020. Accessed September 25, 2020. <https://github.com/2020PB/police-brutality>
10. Count Love. Accessed October 1, 2020. <https://countlove.org/>